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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARC CHRISTIAN DAVIS, WALTER DENNIS DAVIS, and
WALLACE JAY DAVIS

Appeal 2007-4256
Application 10/606,987
Technology Center 3700

Decided: February 28, 2008

Before WILLIAM F. PATE, III, TERRY J. OWENS, and JOHN C. KERINS,
Administrative Patent Judges.

PATE, III, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-8, 10-21, and 23-25¹. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants claimed invention is directed to a solid laminated ball bat with a predetermined weight distribution (Spec. 3:2-3). Claim 1, reproduced below, is representative of the subject matter on appeal.

1. A solid laminated ball bat having a predetermined exterior outline, comprising:
 - an elongated body disposed about a longitudinally extending axis, said body having an outer surface defined by the exterior outline of the bat, said body including a handle on one end and a barrel on the opposite end, said body including a label section connected between said handle and said barrel;
 - said bat including in at least one of said handle, said barrel and said label section, at least a first plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other,

¹ Claims 9, 22, 32, and 33 have been canceled, and claims 26-31 and 34-53 have been withdrawn from consideration.

each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said first plurality of bonded together strips defining a first portion of the bat;

 said bat further including in at least one of said handle, said barrel and said label section, at least a second plurality of thin strips, each thin strip defining a pair of opposed faces, each said face defining a substantially flat plane, each said plane being substantially parallel to the other, each said strip further defining a peripheral edge connecting said opposed faces, at least one face of one of said strips being bonded to a face of an adjacently disposed strip, said second plurality of bonded strips defining a second portion of the bat;

 wherein at least one thin strip of said first plurality of thin strips is composed of a first material;

 wherein at least one thin strip of said second plurality of thin strips is composed of a second material;

 wherein the density of the first portion of the bat differs from the density of the second portion of the bat; and

 wherein the density of said first portion, the density of said second portion, the location of said first portion, and the location of said second portion are selected to provide for a bat having a center of mass located between a predefined first-point and a predefined second-point.

THE REJECTIONS

The Examiner relies upon the following evidence in the rejections:

Smith	US 1,706,680	Feb. 29, 1928
You	US 4,572,508	Feb. 25, 1986
Cook	US 4,714,251	Dec. 22, 1987
Winterowd	US 5,944,938	Aug. 31, 1999
Bender	US 6,007,440	Dec. 28, 1999
Burns	US 6,506,823 B2	Jan. 14, 2003

The following rejections are before us for review.

1. Claims 1-4, 6, 7, 11, 13-16, 18-20, and 24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bender and Smith.

2. Claims 5 and 17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bender, Smith, and Cook.

3. Claims 8 and 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bender, Smith, and Winterowd.

4. Claims 10, 22, and 23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bender, Smith and Burns.

5. Claims 12 and 25 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bender, Smith, and You.

ISSUES

Appellants contend that “neither Smith nor Bender et al. teach using bat portions that may be selectively positioned to strategically position the bats [sic] sweet spot zone at a predefined position along the length of the bat for a bat having

a predetermined exterior an [sic] outline" (Appeal Br. 15) The Examiner found that "when one manufactures a bat as disclosed by Bender, one is choosing lamina of particular densities to form the bat and is selecting denser lamina for the medial portion of the bat" and "also deciding, or predetermining, what they desire the outer shape of the bat to look like" (Answer 7). The Examiner further found that "[i]n taking these steps one is inherently manufacturing a bat which has a predetermined 'sweet spot zone' or 'center of mass'" (Answer 7-8).

The issues before us are:

- 1.Whether Appellants have shown that the Examiner erred in rejecting claims 1-4, 6, 7, 11, 13-16, 18-20, and 24 as unpatentable over Bender and Smith.
- 2.Whether Appellants have shown that the Examiner erred in rejecting claims 5 and 17 as unpatentable over Bender, Smith, and Cook.
- 3.Whether Appellants have shown that the Examiner erred in rejecting claims 8 and 21 as unpatentable over Bender, Smith, and Winterowd.
- 4.Whether Appellants have shown that the Examiner erred in rejecting claims 10, 22, and 23 as unpatentable over Bender, Smith and Burns.
- 5.Whether Appellants have shown that the Examiner erred in rejecting claims 12 and 25 as unpatentable over Bender, Smith, and You.

FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed.

Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1.Bender teaches a ball bat 10 constructed of an inner layer 50 bounded by first and second outer layers 70. The inner layer typically contains four inner lamina 60 bonded together (Bender, col. 3, ll. 40-42).

2.The outer layer 70 may be formed from two or more outer lamina 80 bonded together (Bender, col. 5, ll. 17-19).

3.Each of the initial laminas is graded according to some indicator quality, such as density (Bender, col. 4, ll. 1-2).

4.Having determined the density of each individual initial lamina pieces, the lamina are then segregated into two groups. A first group, having a relatively lower density or quality, for use in construction of the outer layers 70, and a second group, having relatively higher density or quality, for use in construction of the inner layer 50. For example, wood having a density less than 44 pounds per cubic foot is put into the first group, while wood having a density greater than 44 pounds per cubic foot is put into the second group (Bender, col. 4, ll. 5-20).

5.Four inner lamina 60 are used in the construction of the inner layer 50, which forms the handle and inner barrel portion of the bat. Where four inner lamina are used, each typically has a thickness of 0.25 inches. However, a greater or lesser number of lamina can be substituted (Bender, col. 4, ll. 31-36).

6.The use of a greater number of lamina will result in each lamina being thinner (Bender, col. 4, ll. 41-42).

7.The laminated billet 44, i.e., the inner and outer layers, is then turned on a lathe in a manner that contours the bat to form a handle, barrel and transition between the two (Bender, col. 5, ll. 30-32).

8.The handle portion of the turned bat inherently has a different density from the barrel portion because it contains less of the outer layers 70 than the barrel portion of the bat (Bender, Figs. 5 and 6).

9.Smith teaches a laminated baseball bat where the two outer most laminations are light ash wood and the center lamination is hickory (Smith, ll. 1-10).

10.The hickory insert is inlaid about one-eighth of an inch at the large end of the bat or batting end and tapering back to about three quarters of an inch or larger at the handle of the bat (Smith, ll. 41-45).

11.You teaches a laminated baseball bat constructed of laminated wooden plates with reinforced plastic material sandwiched between them and having a tapered grip end and a head (You, col. 1, ll. 22-26).

12.Cook teaches a bat formed of three distinct laminated portions. The handle portion is formed of light wood such as white ash, the center or intermediate portion is formed of a heavy wood such as hickory, and the barrel portion of the bat is formed of a soft wood, such as soft maple (Cook, col. 1, ll. 24-30).

PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the

subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”” *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). See also *KSR*, 127 S.Ct. at 1734 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”) The Court in *Graham* further noted that evidence of secondary considerations “might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” 383 U.S. at 17-18.

In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 1739, and discussed circumstances in which a patent might be determined to be obvious. In particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248.” *KSR*, 127 S.Ct. at 1739 (citing *Graham*, 383 U.S. at 12 (emphasis added)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

Id. at 1740. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

The Supreme Court stated that “[f]ollowing these principles may be more difficult in other cases than it is here because the claimed subject matter may involve more than the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement.” *Id.* The Court explained,

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.

Id. at 1740-41. The Court noted that “[t]o facilitate review, this analysis should be made explicit.” *Id.* (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006).

(“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). However, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

ANALYSIS

Rejection of claims 1-4, 6, 7, 11, 13-16, 18-20, and 24 as unpatentable over Bender and Smith

Appellants argue claims 1-4, 11, 13-16, 20, and 24 as a group (Appeal Br. 10-18). We select claim 1 as a representative claim and the remaining claims of the group stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Appellants contend that “neither Smith nor Bender et al. teach using bat portions that may be selectively positioned to strategically position the bats [sic] sweet spot zone at a predefined position along the length of the bat for a bat having a predetermined exterior an [sic] outline” (Appeal Br. 15) The Examiner found that “when one manufactures a bat as disclosed by Bender, one is choosing lamina of particular densities to form the bat and is selecting denser lamina for the medial portion of the bat” and “also deciding, or predetermining, what they desire the outer shape of the bat to look like” (Answer 7). The Examiner further found that “[i]n taking these steps one is inherently manufacturing a bat which has a predetermined ‘sweet spot zone’ or ‘center of mass’” (Answer 7-8).

In response, Appellants contend that “the Examiner has failed to show where Bender (or any cited reference) provides any teachings relating to selectively positioning a bats sweep [sic] spot zone or center of mass using any method and certainly not by forming portions of a bat with *different materials* having different densities (and associated weights)” (Reply Br. 4) (emphasis in original). However, the Examiner need not show where Bender or any other cited reference provides such a teaching in order to support his rejection of claim 1.

Claim 1 does not recite “selectively positioning a bat’s sweet spot zone or center of mass” as Appellants contend, but rather only requires that the density or location of the first and second portions provide a center of mass between a predefined first-point and a predefined second-point. Bender teaches a laminated ball bat 10 constructed of an inner layer 50 bounded by first and second outer layers 70 (Finding of Fact 1). The inner layer 50 and the first and second outer layers 70 are formed from a plurality of thin strips laminated together (Finding of Facts 1 and 2). The material of the inner layer 50 is different from the material of the outer layers 70, inasmuch as they are constructed of wood having different densities (Finding of Facts 3 and 4). The laminated bat of Bender also inherently has a first portion, i.e., the handle, having a different density from a second portion, i.e., the barrel, because the barrel portion contains more of the outer layers 70 than the handle portion. The laminated bat of Bender inherently has a center of mass between a first and second point. Furthermore, as found by the Examiner, the center of mass of Bender’s laminated bat is inherently determined by the density

and location of the laminated portions. Accordingly, Bender teaches a laminated bat as claimed.

Appellants further contend that “it was not obvious to Bender et al. to use different wood types to achieve bat portions with different densities and having different lengths so that such bat portions may be selectively positioned to selectively position a bat’s sweep [sic] spot zone at a predefined location along the length of the bat” (Appeal Br. 16-17). However, as discussed above, claim 1 does not require selectively positioning the bat’s sweet spot.

With regard to Appellants’ contention that Bender fails to teach or suggest the use of “different wood types to achieve bat portions with different densities,” we note that claim 1 does not require that different materials be used to achieve bat portions with different densities. To the contrary, claim 1 only requires that at least one of the lamina, i.e., one thin strip, in the first plurality of thin strips be composed of a first material, at least one of the lamina in the second plurality of thin strips be composed of a second material, and the density of the first portion of the bat differ from the density of the second portion of the bat. There is no requirement that the first and second material have different densities. The laminated bat of Bender inherently has a first portion, i.e., the handle, having a different density from a second portion, i.e., the barrel, because the barrel portion contains more of the outer layers 70 than the handle portion. As such, we find Appellants’ argument unpersuasive.

Finally, Appellants contend that “Bender et al. cannot alter the weight distribution of the Bender et al. bat for a particular lamina configuration by selectively positioning the various bat portions as the bat portions run the full length and width of the bat when in block form” (Appeal Br. 17). Again, the claimed invention does not require selectively positioning various bat portions in order to alter the weight distribution (See discussion *supra*).

Appellants argue claims 6, 7, 18, and 19 as a group (Appeal Br. 23). We select claim 6 as a representative claim and the remaining claims of the group stand or fall with claim 6. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Appellants contend that “Bender et al. teaches preferred lamina thicknesses (0.25 inches) that is about **3 times greater** than the Applicants’ maximum thickness of 1/32nd (0.031225) of an inch” (Appeal Br. 23) (emphasis in original). The Examiner found that “the exact thickness [of the lamina of Bender] will depend on the number of lamina used to form the laminate. To support this finding, the Examiner points to column 4, lines 33-37 of Bender which states that the use of a greater number of inner lamina will result in each lamina being thinner. Therefore, the Examiner held absent a showing of unexpected results the use of lamina strips with a thickness of 1/32th of an inch would have been obvious to one skilled in the art. Appellants have not provided any evidence that the claimed thickness produces an unexpected result or was outside of the capabilities of one of ordinary skill in the art. As such, we find Appellants’ arguments unpersuasive.

Rejection of claims 5 and 17 as unpatentable over Bender, Smith, and Cook

Appellants argue claims 5 and 17 as a group (Appeal Br. 18). We select claim 5 as a representative claim and the remaining claims of the group stand or fall with claim 5. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

Appellants contend “that not only is there no showing of teachings to support obviously combining the elements of the various references in the manner claimed, it should be clear that the Cook teachings are not compatible with either the Bender et al. or Smith teachings” (Appeal Br. 22). Furthermore, Appellants contend that “one cannot form either the Bender et al. or the Smith bats where the first and second portions (with different densities) are disposed apart from each other (*Id.*). We disagree.

First, regarding the “showing” required to support the combination of Bender, Smith, and Cooke, where, as here “[an application] claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result,” KSR, 127 S.Ct. at 1740 (citing *United States v. Adams*, 383 U.S. 50-51 (1966)). Furthermore, “the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *Id.*

With regard to Appellants’ contention that the teachings of Cook are not compatible with either Bender or Smith, we disagree. Each of the applied

references is directed to laminated bats which have increased performance or durability. Bender teaches increasing the durability, i.e., strength, of the bat by employing an inner laminated layer and outer laminated layers having a different density from the inner layer (Finding of Facts 1-4). Smith teaches using different types of wood for different portions/sections of the bat (Finding of Fact 9). Finally, Cook teaches using different laminated sections along the longitudinal axis of the bat (Finding of Fact 12). Therefore, it would have been within the skill of one of ordinary skill in the art to use different wood types as taught by Smith to alter the densities of the inner and outer layers of lamina not only along the vertical axis of the bat as taught by Bender, but also along the longitudinal axis as taught by Cook. Appellants have not provided any evidence that such a modification is outside the capabilities of one of ordinary skill in the art or that it produces an unexpected result. As such, we sustain the Examiner's rejection of claims 5 and 17 as unpatentable over Bender, Smith, and Cook.

Rejection of claims 8 and 21 as unpatentable over Bender, Smith, and Winterowd

Appellants fail to provide any evidence or argument that claims 8 and 21 are patentable over the combination of Bender, Smith, and Winterowd, other than those arguments presented above with respect to claims 1 and 13, from which claims 8 and 21 depend. We find Appellants' arguments with regard to claims 1 and 13 unpersuasive for those reasons presented *supra*. As such, we sustain the Examiner's rejection of claims 8 and 21.

Rejection of claims 10, 22, and 23 as unpatentable over Bender, Smith and Burns

Appellants fail to provide any evidence or argument that claims 10, 22, and 23 are patentable over the combination of Bender, Smith, and Burns, other than those arguments presented above with respect to claims 1 and 13, from which claims 10, 22 and 23 depend. We find Appellants' arguments with regard to claims 1 and 13 unpersuasive for those reasons presented *supra*. As such, we sustain the Examiner's rejection of claims 10, 22, and 23.

Rejection of claims 12 and 25 as unpatentable over Bender, Smith, and You

Appellants fail to provide any evidence or argument that claims 12 and 25 are patentable over the combination of Bender, Smith, and You, other than those arguments presented above with respect to claims 1 and 13, from which claims 12 and 25 depend. We find Appellants' arguments with regard to claims 1 and 13 unpersuasive for those reasons presented *supra*. As such, we sustain the Examiner's rejection of claims 12 and 25.

CONCLUSIONS OF LAW

We conclude Appellants have not shown that the Examiner erred in rejecting claims 1-4, 6, 7, 11, 13-16, 18-20, and 24 as unpatentable over Bender and Smith, claims 5 and 17 as unpatentable over Bender, Smith, and Cook, claims 8 and 21 as unpatentable over Bender, Smith, and Winterowd, claims 10, 22, and 23 as unpatentable over Bender, Smith, and Burns, and claims 12 and 25 as unpatentable over Bender, Smith, and You.

Appeal 2007-4256
Application 10/606,987

DECISION

The Examiner's decision under 35 U.S.C. § 103(a) to reject claims 1-4, 6, 7, 11, 13-16, 18-20, and 24 as unpatentable over Bender and Smith, claims 5 and 17 as unpatentable over Bender, Smith, and Cook, claims 8 and 21 as unpatentable over Bender, Smith, and Winterowd, claims 10, 22, and 23 as unpatentable over Bender, Smith and Burns, and claims 12 and 25 as unpatentable over Bender, Smith, and You is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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